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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,922	11/29/2002	Rainer Bruchhaus	2002P11001US	5323

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EXAMINER

FENTY, JESSE A

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 06/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/065,922

Applicant(s)

BRUCHHAUS ET AL.

Examiner

Jesse A. Fenty

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### *Drawings*

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-8, 11, 14, 17 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by An (US 2003/0057462 A1).

In re claims 1 and 20, An (Figs. 1-7) discloses a semiconductor device, comprising:

A substrate (23);

A feature (ferroelectric capacitor) formed on the substrate; and

A protection layer (51) covering at least a portion of the feature sensitive to radiation.

The term, “radiation protection layer” refers to a use of the structure. Without further limiting or narrowing the structure of the claim, the term is interpreted broadly because terms that simply set

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forth the intended use, a property inherent in or a function, do not differentiate the claimed composition of these elements from those known to prior art.

In re claim 2, An discloses the device of claim 1, wherein the feature comprises a ferroelectric capacitor having top (37) and bottom (33) electrodes separated by a ferroelectric layer (35).

In re claim 3, An discloses the device of claim 2, wherein the protection layer is located on sidewalls of the capacitor to form spacers.

In re claim 4, An discloses the device of claim 2, further comprising a plurality of capacitors to form a memory array.

In re claim 5, An discloses the device of claim 4, wherein the protection layer is located on sidewalls of the capacitor to form spacers.

In re claim 6, An discloses the device of claim 2, further comprising a plurality of features to form a memory array arranged in a series architecture (through use of plate 61).

In re claim 7, An discloses the device of claim 6, wherein the protection layer is located on sidewalls of the capacitor to form spacers.

In re claim 8, An discloses the device of claim 1, wherein the protection layer comprises a material which serves as a barrier to radiation (An discloses in page 2 section [0022]) that this layer may comprise a metal oxide such as aluminum oxide, titanium oxide, silicon oxide, zirconium oxide, or cesium oxide. These materials fall within the category of materials suggested by Applicant.(pp. 4, section [0015], specifically “oxides, alloys or compounds of noble metals.”

In re claim 11, An discloses the device of claim 8, wherein the protection layer comprises a material which serves as a barrier to UV radiation.

In re claims 14 and 17, An discloses the devices of claims 11 and 8 respectively, wherein the radiation protection layer comprises a noble metal, oxides, or compounds thereof (An; column 2, section [0022]).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9, 10, 12, 13, 15, 16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over An as applied to claims 8, 11, 14 and 17 above, and further in view of Haneder et al. (U.S. 2002/0125518 A1).

In re claims 9, 10, 12, 13, 15, 16, 18 and 19, An discloses the device of claims 8, 11, 14 and 17 respectively, but does not expressly disclose an additional insulating layer separating the spacers from the feature, the insulating layer serving as a barrier to hydrogen. Haneder discloses an inner edge region (27) comprising aluminum oxide, a barrier to hydrogen. It would have been obvious for one skilled in the art at the time of the invention to insert edge regions of Haneder into the device of An for the purpose, for example, of providing flank coverings to rule out leakage currents through the ferroelectric layer (Haneder; pp. 2, section [0018]).

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*Conclusion*


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse A. Fenty whose telephone number is 703-308-8137. The examiner can normally be reached on 5/4-9 1st Fri. Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-746-3892 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Jesse A. Fenty  
Examiner  
Art Unit 2815

JAF  
June 24, 2003



EDDIE LEE  
SUPERVISORY PATENT EXAMINER  
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